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IMPLEMENTATION PLAN REVIEW

FOR

ILLINOIS

AS REQUIRED

BY

ENERGY SUPPLY

AND

ENVIRONMENTAL COORDINATION ACT

U. S. ENVIRONMENTAL PROTECTION AGENCY

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16. ABSTRACT

Section IV of the Energy Supply and Environmental Coordination Act of 1974, (ESECA) requires EPA to review each State Implementation Plan (SIP) to determine if revisions can be made to control regulations for stationary fuel combustion sources without interfering with the attainment and maintenance of the national ambient air quality standards. This document, which is also required by Section IV of ESECA, is EPA's report to the State indicating where regulations might be revised.

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IMPLEMENTATION PLAN REVIEW

FOR

ILLINOIS

REQUIRED BY THE ENERGY SUPPLY AND ENVIRONMENTAL COORDINATION ACT

PREPARED BY THE FOLLOWING TASK FORCE:

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STATE IMPLEMENTATION PLAN REVIEW FOR THE STATE OF ILLINOIS

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STATE IMPLEMENTATION PLAN REVIEW
FOR
THE STATE OF ILLINOIS

1.0 EXECUTIVE SUMMARY

The enclosed report is the U. S. Environmental Protection Agency's (EPA) response to Section IV of the Energy Supply and Environmental Coordination Act of 1974 (ESECA). Section IV requires EPA to review each State Implementation Plan (SIP) to determine if revisions can be made to control regulations for stationary fuel combustion sources without interfering with the attainment and maintenance of the National Ambient Air Quality Standards (NNAQS). In addition to requiring that EPA report to the state on whether control regulations might be revised, ESECA provides that EPA must approve or disapprove any revised regulations relating to fuel burning stationary sources within three months after they are submitted to EPA by the states. The states may, as in the Clean Air Act of 1970, initiate State Implementation Plan revisions; ESECA does not, however, require states to change any existing plan.

Congress has intended that this report provide the state with information on excessively restrictive control regulations. The intent of ESECA is that wherever possible SIP's be revised in the interest of conserving low sulfur fuels or converting sources which burn oil or natural gas to coal. EPA's objective in carrying out the SIP reviews, therefore, has been to try to establish if emissions from combustion sources may be increased. Where an indication can be found that emissions from certain fuel burning sources can be increased and still attain and maintain NAAQS, it may be plausible that fuel resource allocations can be altered for "clean fuel savings" in a manner consistent with both environmental and national energy needs.

In many respects, the ESECA SIP reviews parallel EPA's policy on clean fuels. The Clean Fuels Policy has consisted of reviewing implementation plans with regards to saving low sulfur fuels and, where the primary sulfur dioxide air quality standards were not exceeded, to encourage states to either defer compliance with regulations or to revise the SO_2 emission regulations. The states have also been asked to discourage large scale shifts from coal to oil where this could be done without jeopardizing the attainment and maintenance of the NAAQS.

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To date, EPA's fuels policy has addressed only those states with the largest clean fuels saving potential. Several of these states have or are currently in the process of revising SO_2 regulations. These states are generally in the eastern half of the United States. ESECA, however, extends the analysis of potentially over-restrictive regulations to all 55 states and territories. In addition, the current reviews address the attainment and maintenance of all the National Ambient Air Quality Standards.

There are, in general, three predominant reasons for the existence of overly restrictive emission limitations within the State Implementation Plans. These are: 1) the use of the example region approach in developing statewide air quality control strategies; 2) the existence of State Air Quality Standards which are more stringent than NAAQS; and 3) the "hot spots" in only part of an Air Quality Control Region (AQCR) which have been used as the basis for controlling the entire region. Since each of these situations affect many state plans and in some instances conflict with current national energy concerns, a review of the State Implementation Plans is a logical follow-up to EPA's initial appraisal of the SIP's conducted in 1972. At that time SIP's were approved by EPA if they demonstrated the attainment of NAAQS or more stringent state air quality standards. Also, at that time an acceptable method for formulating control strategies was the use of an example region for demonstrating the attainment of the standards.

The example region concept permitted a state to identify the most polluted air quality control region (AQCR) and adopt control regulations which would be adequate to attain the NAAQS in that region. In using an example region, it was assumed that NAAQS would be attained in the other AQCR's of the state if the control regulations were applied to similar sources. The problem with the use of an example region is that it can result in excessive controls, especially in the utilization of clean fuels, for areas of the state where sources would not otherwise contribute to NAAQS violations. For example, a control strategy based on a particular region or source can result in a regulation requiring 1 percent sulfur oil to be burned statewide where the use of 3 percent sulfur coal would be adequate to attain NAAQS in some locations.

EPA anticipates that a number of states will use the review findings to assist them in deciding whether or not to revise portions of their State Implementation Plans. However, it is most important for those states which desire to submit a revised plan to recognize the review's limitations. The findings

of this report are by no means conclusive and are neither intended nor adequate to be the sole basis for SIP revisions; they do, however, represent EPA's best judgment and effort in complying with the ESECA requirements. The time and resources which EPA has had to prepare the reports have not permitted the consideration of growth, economics, and control strategy tradeoffs. Also, there have been only limited dispersion modeling data available by which to address individual point source emissions. Where the modeling data for specific sources were found, however, they were used in the analysis.

The data upon which the reports' findings are based is the most currently available to the Federal Government. However, EPA believes that the states possess the best information for developing revised plans. The states have the most up-to-date air quality and emissions data, a better feel for growth, and the fullest understanding for the complex problems facing them in the attainment and maintenance of quality air. Therefore, those states desiring to revise a plan are encouraged to verify and, in many instances, expand the modeling and monitoring data supporting EPA's findings. In developing a suitable plan, it is suggested that states select control strategies which place emissions for fuel combustion sources into perspective with all sources of emissions such as smelters or other industrial processes. States are encouraged to consider the overall impact which the potential relaxation of overly restrictive emissions regulations for combustion sources might have on their future control programs. This may include air quality maintenance, prevention of significant deterioration, increased TSP, NO_x, and HC emissions which occur in fuel switching, and other potential air pollution situations such as sulfates.

Although the enclosed analysis has attempted to address the attainment of all the NAAQS, most of the review has focused on total suspended particulate matter (TSP) and sulfur dioxide (SO_2) emissions. This is because stationary fuel combustion sources constitute the greatest source of SO_2 emissions and are a major source of TSP emissions.

Part of each state's review was organized to provide an analysis of the SO_2 and TSP emission tolerances within each of the various AQCR's. The regional emission tolerance estimate is, in many cases, EPA's only measure of the "overcleaning" accomplished by a SIP. The tolerance assessments have been combined with other regional air quality "indicators" in an attempt to provide an evaluation of a region's candidacy for changing emission limitation regulations. In conjunction with the regional analysis, a summary of the state's fuel combustion sources (power plants, industrial sources, and area sources) has also been carried out.

The following are the principle findings for the State of Illinois. (Air Quality Control Regions are displayed on Fig. 1-1.)

- The Illinois SIP was developed to meet the original federal secondary annual NAAQS for both particulates and SO_2. Since the development of the plan, the federal EPA has rescinded the annual and 24-hour secondary SO_2 standards. There are indications, however, that the stringency of the regulations required to meet the present 24-hour SO_2 standard in Illinois is the same as that required to meet the rescinded annual standard and hence that the federal rescission should not affect the stringency of the SO_2 emission regulations required in Illinois.

- The sufficiency of the Illinois regulations was demonstrated for each AQCR for both particulates and SO_2. Dispersion modeling was employed in the Burlington-Keokuk (#65), Metropolitan Chicago (#67), and Metropolitan St. Louis (#70) AQCRs; a modified rollback technique was employed in the other eight Illinois regions.

- Illinois has not initiated any regulatory changes for SO_2 emissions as permitted under EPA's Clean Fuels Policy but has preferred to rely on variances for large combustion sources. The Illinois Pollution Control Board held inquiry hearings on the desirability of changing SO_2 emission regulations and has recommended some changes in the existing regulations.

- Within the framework of this limited analysis there appears little tolerance throughout the state for increased particulate emissions and hence for relaxed particulate emission regulations. This is due to high TSP readings (based on 1973 data) and several proposed Air Quality Maintenance Area designations. In areas where there are indications of an insufficient number of monitoring sites, there are either reported high TSP levels or an insignificant clean fuels saving potential.

- There are indications of a margin for increased SO_2 emissions in Metropolitan Dubuque (#68), Metropolitan Quad Cities (#69), Paducah-Cairo (#72), and Rockford-Janesville-Beloit (#73). In Burlington-Keokuk (#65) there may also be a significant potential for clean fuel savings but, in this case, the result must be qualified by the existence of proposed SO_2 AQMAs is Peoria, Tazewell, and Woodford counties. (In addition, recent local air quality data shows violations of both short-term SO_2 NAAQS in Peoria, suggesting that a thorough study based on recent data would be necessary before regulations could be relaxed.) In the other four regions either the present regulations already allow the use of high sulfur coal and there are only minimal savings to be realized from changing regulations to permit the use of higher sulfur oils or consumption is so low that only a minimal clean fuel saving could be realized even with relaxed regulations.

- For Burlington-Keokuk outside the Peoria area where some source-specific regulation relaxation might be possible, the major clean fuels conservation would come from increased utilization of high sulfur coal. Some overall

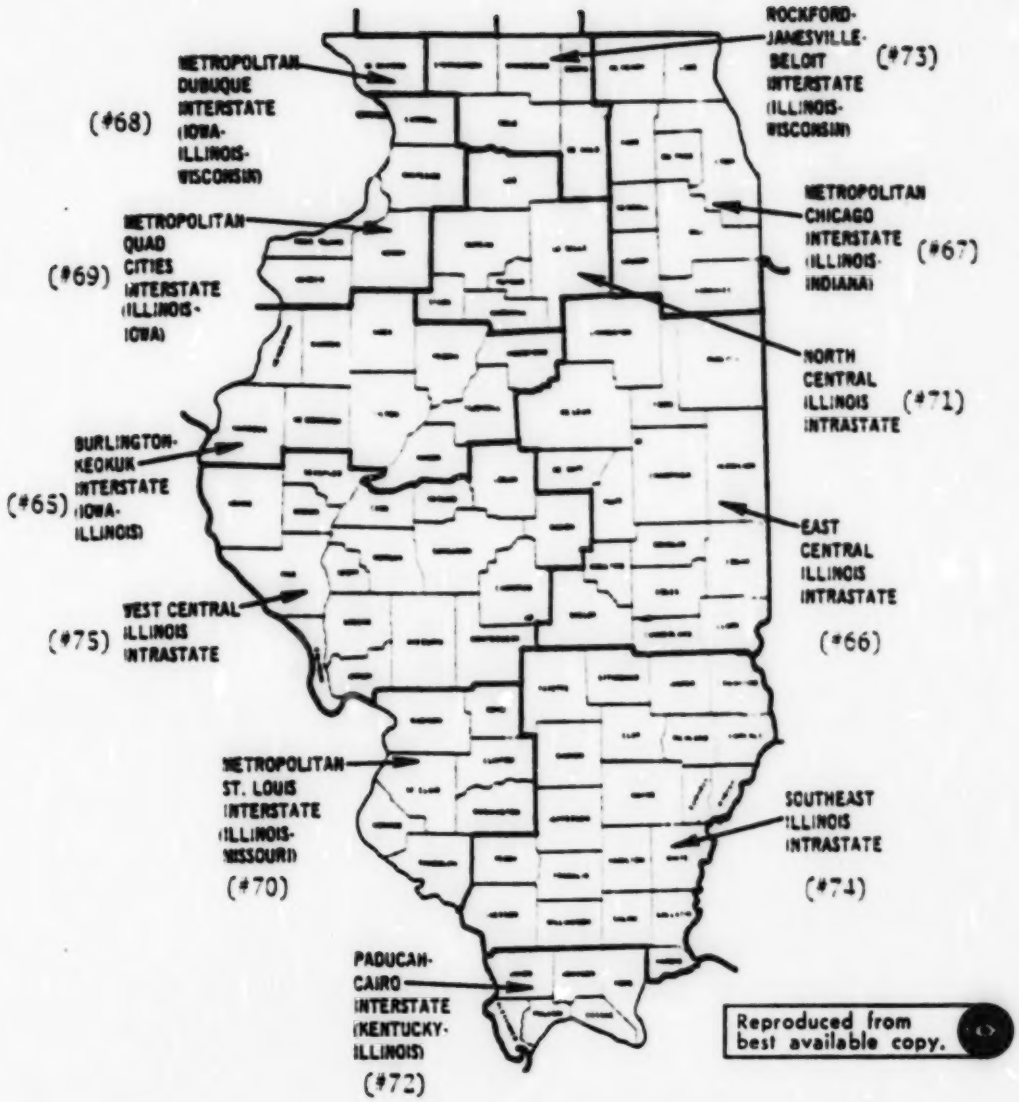

Figure 1-1. Illinois Air Quality Control Regions (AQCR)

savings of low sulfur oils might also be realized particulary if higher sulfur oils are available for area sources. Should the state decide to revise SO_2 emission regulations in this region, EPA suggests that the impact of revision on the Iowa portion of the region be thoroughly investigated.

- The Metropolitan Chicago AQCR (#67) has been designated as a Priority I region for NO_x because of high NO_x readings. Although NO_x is not treated in depth in this review, any change in SO_2 or particulate regulations which might be contemplated for this region must be considered in light of the impact on NO_x emissions. There is little possibility that NO_x emissions can be increased without hampering NAAQS attainment and maintenance.

2.0 ILLINOIS STATE IMPLEMENTATION PLAN REVIEW

2.1 Summary

A revision of fuel combustion source emissions regulations will depend on many factors. For example:

- Does the state have air quality standards which are more stringent than NAAQS?
- Does the state have emission limitation regulations for control of (1) power plants, (2) industrial sources, (3) area sources?
- Did the state use an example region approach for demonstrating the attainment of NAAQS or more stringent state standards?
- Has the state not initiated action to modify combustion source emission regulations for fuel savings; i.e., under the Clean Fuels Policy?
- Are there no proposed Air Quality Maintenance Areas?
- Are there indications of a sufficient number of monitoring sites within a region?
- Is there an expected 1975 attainment date for NAAQS?
- Based on (1973) air quality data, are there no reported violations of NAAQS?
- Based on (1973) air quality data, are there indications of a tolerance for increasing emissions?
- Are the total emissions from stationary fuel combustion sources a relatively small portion of the regional total?
- Do modeling results for specific fuel combustion sources show a potential for a regulation revision?
- Is there a significant clean fuels savings potential in the region?
- Must the regulations be revised to accomplish significant fuels switching?

The following portion of this report is directed at answering these questions. An AQCR's potential for revising regulations increases when there are affirmative responses to the above.

The initial part of the SIP review report, Section 2 and Appendix A, is organized to provide the background and current situation information for the State Implementation Plan, Section 3, and the remaining Appendices provide an AQCR analysis which helps establish the overall potential for revising regulations. An evaluation of regional air quality indicators is presented

in Appendix B; power plants, industrial sources, and area sources are analyzed in Appendices C, D, and E, respectively.

Based on an overall evaluation of EPA's current information, AQCR's have been classified as good, marginal, or poor candidates for regulation revisions. Table 2-1 summarizes the State Implementation Plan Review. The remaining portions of the report support this summary with explanations.

2.2 Air Quality Setting for the State of Illinois

2.2.1 Illinois Air Pollution Control Areas

The State of Illinois is divided into eleven Air Quality Control Regions (AQCRs) as shown in Fig. 1-1. There are four intrastate and seven interstate regions. Table A-1 gives the pollutant priority classifications for each of the eleven regions.

This table also shows population and population density to be largest in three of the four metropolitan regions, Metropolitan Chicago (#67), Metropolitan Quad Cities (#69), and Metropolitan St. Louis (#70), and in the Burlington-Keokuk (#65) and Rockford-Janesville-Beloit (#73) regions. Based on present conditions and growth projections for the state, thirteen counties have been proposed as Air Quality Maintenance Areas (AQMAs) for particulates and twelve for sulfur dioxide. These are indicated in Table A-1 and Fig. A-1.

2.2.2 Illinois Ambient Air Quality Standards

As shown in Table A-2, all the federal primary and secondary National Ambient Air Quality Standards (NAAQS) for particulates, sulfur dioxide, and nitrogen dioxide apply in Illinois. In addition Illinois has adopted annual and 24-hour air quality goals for sulfur dioxide which are potentially more stringent than the federal standard and has also adopted a one-hour goal. These goals, however, are not enforcable standards and apply only in the Chicago and St. Louis MMAs. In the analysis to follow, only attainment of the federal NAAQS will be considered.

2.2.3 Illinois Air Quality Status

The current air quality status in Illinois is summarized in Table A-3 for particulates and in Table A-4 for sulfur dioxide. All data came from the SAROAD data bank as of June, 1974.

Table 2-8. State Implementation Plan Review Summary for Illinois

"Indicators"	STATE		Metropolitan Decatur[a] AQCR 065		East Central Illinois AQCR 066		Metropolitan Chicago[a] AQCR 067		Metropolitan Quad Cities[a] AQCR 068		Metropolitan Quad Cities[a] AQCR 069	
	TSP	SO_2	TSP	SO_2	TSP	SO_2	TSP	SO_2	TSP	SO_2	TSP	SO_2
• Does the State have air quality standards which are more stringent than NAAQS?	No	No										
• Does the State have emission limiting regulations for control of: 1. Power plants 2. Industrial sources 3. Area sources	Yes Yes Yes	Yes Yes Yes										
• Did the State use an example region approach for demonstrating the attainment of NAAQS or more stringent State standards?	b	b	Example Region		Modified Rollback		Example Region		Modified Rollback		Modified Rollback	
• Has the State not initiated action to modify combustion source emission regulations for fuel savings, i.e., under the Clean Fuels Policy?	No	No										
• Are there no proposed Air Quality Maintenance Areas?			No	No	Yes	Yes	No	No	No[c]	Yes	Yes	Yes
• Are there indications of a sufficient number of monitoring sites within a region and in SMSA's?			No	No	No	No	Yes[c]	Yes[c]	Yes[c]	Yes[c]	Yes[c]	Yes[c]
• Is there an expected 1975 attainment date for NAAQS?			Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Based on (1973) Air Quality Data, are there no reported violations of NAAQS?			No	Yes[d,e]	NA	NA	No	No	No	Yes[d]	No	Yes[d]
• Based on (1973) Air Quality Data, are there indications of a significant tolerance for increasing emissions?			No	Yes	NA	NA	No	No	No	Yes	No	Yes
• Are the emissions from stationary fuel combustion sources a relatively small portion of the regional total?			No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes
• Do modeling results for specific fuel combustion sources show a potential for a regulation revision?			NA	Yes	NA	No	NA	NA	NA	NA	NA	NA
• Is there a significant Clean Fuels Saving potential in the region?			Yes		No		No		No		No	
• Must the regulations be revised to accomplish significant fuel switching?			Yes		Yes		Yes		Yes		Yes	
• Based on the above indicators, what is the potential for revising fuel combustion source emission limiting regulations?			TSP: Poor SO_2: Marginal		TSP: Poor SO_2: Poor		TSP: Poor SO_2: Poor		TSP: Poor SO_2: Poor		TSP: Poor SO_2: Marginal	

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Table 2 I. State Implementation Plan Review Summary for Illinois (Contd.)

"INDICATORS"	Metropolitan St. Louis[a] AQCR #70		South Central Illinois AQCR #71		Paducah Cairo[a] AQCR #72		Rockford Janesville-Beloit[a] AQCR #73		Southeast Illinois AQCR #74		West Central Illinois AQCR #75	
	TSP	SO_2	TSP	SO_2	TSP	SO_2	TSP	SO_2	TSP	SO_2	TSP	SO_2
• Does the State have air quality standards which are more stringent than NAAQS?												
• Does the State have emission limiting regulations for control of: 1. Power plants 2. Industrial sources 3. Area sources												
• Did the State use an example region approach for demonstrating the attainment of NAAQS or more stringent State standards?	Example Region		Modified Rollback		Modified Rollback		Modified Rollback		Modified Rollback		Modified Rollback	
• Has the State not initiated action to modify combustion source emission regulations for fuel savings; i.e., under the Clean Fuels Policy?												
• Are there no proposed Air Quality Maintenance Areas?	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
• Are there indications of a sufficient number of monitoring sites within a region and in SAROAD?	Yes[c]	Yes	No	No	Yes[c]	Yes[c]	Yes[c]	Yes[c]	No	No	No	No
• Is there an expected 1975 attainment date for NAAQS?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes
• Based on (1973) Air Quality Data, are there no reported violations of NAAQS?	No	No[c]	NA	NA	No	Yes	Yes[d]	Yes	NA	NA	Yes[d]	NA
• Based on (1973) Air Quality Data, are there indications of a significant tolerance for increasing emissions?	No	No[c]	NA	NA	No	Yes	No	Yes	NA	NA	Yes	NA
• Are the emissions from stationary fuel combustion sources a relatively small portion of the regional total?	Yes	No	Yes	No	No	Yes	No	No	No	No	No	No
• Do modeling results for specific fuel combustion sources show a potential for a regulation revision?	NA	NA	NA	No	NA	No[f]	NA	NA	NA	No[e]	NA	No[f]
• Is there a significant Clean Fuels Saving potential in the region?	No		No		No		No		No		No	
• Must the regulations be revised to accomplish significant fuel switching?	Yes		Yes		Yes		Yes		Yes		Yes	
• Based on the above indicators, what is the potential for revising fuel combustion source emission limiting regulations?	TSP - Poor SO_2 - Poor		TSP - Poor SO_2 - Poor		TSP - Poor SO_2 - Poor		TSP - Marginal SO_2 - Marginal		TSP - Poor SO_2 - Poor		TSP - Poor SO_2 - Poor	

Table 2-1. State Implementation Plan Review Summary for Illinois (Contd.)

Footnotes

[a] Interstate.

[b] There is a proposed AQMA in the Iowa portion of the region.

[c] There are a sufficient number of sites but not all of them are reporting an annual average.

[d] No annual data available.

[e] More recent local data indicate that there are NAAQS violations in this region.

[f] Modeling calculations indicate that the 24-hour primary air quality standard may be exceeded even at SIP.

[g] Modeling calculations indicate that the 24-hour and annual primary air quality standards may be exceeded even at SIP.

[h] Approach used depended on AQCR.

There is no particulate data for East Central Illinois (#66), North Central Illinois (#71), and Southwest Illinois (#74) and no annual average data for Rockford-Janesville-Beloit (#73) and West Central Illinois (#75) in SAROAD. The latter two regions are not reporting any violations of the 24-hour particulate NAAQS. All the other regions for which both annual and 24-hour data exist are reporting violations of the NAAQS. Particulate AQMAs have been proposed in Burlington-Keokuk (#65), Metropolitan Chicago (#67), Metropolitan Dubuque (#68), Metropolitan St. Louis (#70), and West Central Illinois (#75). These proposals are consistent with the measured air quality for the first three regions and for West Central Illinois (#75) the problem could be anticipated on the basis of projected growth or not apparent from the available data. Thus, with the possible exceptions of Rockford-Janesville-Beloit (#73) and West Central Illinois (#75), the indications are that relaxation of particulate emission regulations will not be possible without disrupting NAAQS attainment or maintenance (see Table 2-1).

SO_2 air quality data is unavailable in the SAROAD data bank for East Central Illinois (#66), North Central Illinois (#71), Southeast Illinois (#74); and West Central Illinois (#75). Annual data is unavailable in SAROAD for Burlington-Keokuk (#65), Metropolitan Dubuque (#68), and Metropolitan Quad Cities (#69). The four regions having only short-term data do not show any NAAQS violations. Of the three regions having more complete data only Metropolitan Chicago (#65) is presently reporting violations of SO_2 ambient standards and is thus the only region for which data exists that does not indicate some tolerance for increased SO_2 emissions based on regional air quality. SO_2 AQMAs have been proposed for Burlington-Keokuk (#65), Metropolitan Chicago (#67), and Metropolitan St. Louis (#70). For the Chicago region the measured air quality is consistent within this proposal and for the other two regions with incomplete data, the problem could be anticipated on the basis of projected growth or not apparent from the available data. (In Metropolitan St. Louis (#70), for example, some more recent local data indicates that there are SO_2 NAAQS violations in the region.) Based on the available SAROAD data, all the regions for which data are available with the exception of Metropolitan Chicago (#67) show a significant tolerance for increasing SO_2 emissions (see Table 2-1).

2.2.4 Illinois Emissions Summary

Emission sources and emission rates are tabulated in Tables A-5 to A-8.

In the eleven AQCR area, Illinois fuel combustion sources account for 30% of the particulate emissions. In Metropolitan Chicago (#67) and West Central Illinois (#75), Illinois fuel combustion sources contribute more than half of the particulate emissions (see Table A-8). Illinois electricity generation contributes substantially more particulate matter than either Illinois industrial/commercial/institutional point sources or Illinois area sources in Burlington-Keokuk (#65), Metropolitan St. Louis (#70), Paducah-Cairo (#72), and Southwest Illinois (#74). Industrial/commercial/institutional point sources are the largest Illinois contributors in West Central Illinois (#75). Area sources are proportionally the largest Illinois particulate sources in Metropolitan Chicago (#67), Metropolitan Dubuque (#68), Metropolitan Quad Cities (#69), and Rockford-Janesville-Beloit (#73). Illinois industrial/commercial/institutional point sources and Illinois area sources are roughly equivalent and are larger particulate sources than Illinois power generation in North Central Illinois (#71) while all three types of sources emit about the same amount of particulate matter in East Central Illinois (#66). Only in West Central Illinois (#75) are there indications of a significant capacity to absorb increased particulate emissions.

Almost half of the SO_2 emitted in the eleven AQCRs comes from Illinois fuel combustion sources. A major portion of the Illinois SO_2 emissions comes from electricity generation in all AQCRs except Metropolitan Dubuque (#68) where area sources predominate, Metropolitan Quad Cities (#69) where industrial/commercial/institutional point sources are most important, and North Central Illinois (#71) and Southwest Illinois (#74) where both the latter two categories of sources emit most of the Illinois SO_2. Area sources are significant in East Central Illinois (#66), Metropolitan Chicago (#67), and Rockford-Janesville-Beloit (#73) while in East Central Illinois (#66) industrial/commercial/institutional point sources are also important. For regions with available SO_2 air quality data, only Metropolitan Chicago (#67) shows a lack of a significant ability to absorb increased SO_2 emissions. Data is unavailable in SAROAD for four regions: East Central Illinois (#66), North Central Illinois (#71), Southeast Illinois (#74), and West Central Illinois (#75).

2.3 Background on the Development of the Current State Implementation Plan

2.3.1 General Information

Dispersion modeling was used in Burlington-Keokuk (#65), Metropolitan Chicago (#67), and Metropolitan St. Louis (#70) to demonstrate the sufficiency of the proposed regulations for attaining the annual SO_2 and particulate NAAQS. A strategy model which permitted "regulated emissions" calculated for various types of proposed regulations to be used directly as input to an AQDM dispersion model was used to evaluate the control strategies. In addition, growth projections were made for 1975 and 1980 and then used as input for the strategy model in order to evaluate the effectiveness of the control strategies for maintaining the standards. Modified rollback calculations were used on a region-by-region basis in the remaining eight regions of the state to show that the standards would be attained.

2.3.2 Particulate Control Strategy

The control strategy for particulate emissions from fuel combustion sources consists of enforcement of the applicable sections of Rule 202 for visual emissions and Rule 203, Section 203(g) for mass emissions of Chapter 2: Air Pollution of the Rules and Regulations of the Illinois Pollution Control Board. Rule 203 is summarized in Table A-9 and Fig. A-2. Certain changes were made between the original proposal of the Implementation Plan and the adoption of the present regulations, all of the changes allowing increased particulate emissions. A more stringent emissions limit applies to most existing sources in the Chicago Major Metropolitan Area, a portion of the Metropolitan Chicago AQCR (#67), than applies to small existing sources in other regions of the state. Federal New Source Performance Standards have been adopted for all new fuel combustion sources. The present strategies were designed to meet the secondary particulate standards throughout Illinois. Existing regulations apply to small commercial and residential sources, that is, to area sources. The analysis indicated that attainment of the secondary standards in major metropolitan areas required the control of such sources. Such control would have to come by switching from coal to oil or natural gas.

2.3.3 Sulfur Dioxide Control Strategy

Rule 204(a)-(e) contains the SO_2 emissions limits whose enforcement constitutes the control strategy for SO_2. These limitations are summarized in Table A-9. For existing sources, more strict regulations apply in the Chicago, St. Louis (Ill.), and Peoria Major Metropolitan Areas than in other regions of the state. These areas are portions of the Metropolitan Chicago (#67), Metropolitan St. Louis (#70), and Burlington-Keokuk (#65) AQCRs, respectively. The federal New Source Performance Standards apply for new sources with heat input greater than 250×10^6 Btu/hr with a somewhat less stringent standard for new smaller sources burning solid fuel. The SO_2 strategy was designed to meet the secondary standards existing at the time of its development throughout the state for 1968 conditions. The growth analysis indicated that some secondary standard violations might occur in 1975 and 1980. Since the adoption of the present regulations, the federal annual and 24-hour SO_2 secondary standards have been rescinded. There were indications, however, that the regulations sufficient to attain the old annual standard would also be required to ensure attainment of the present 24-hour SO_2 standard. Thus, the existing regulations should insure that existing NAAQS are met. Major shifts in fuel consumption to low sulfur oil and natural gas will be necessary for small commercial and residential sources to meet existing standards. The analysis indicated that such conversions were necessary in major metropolitan areas to ensure attainment of the standards. The Illinois regulation also has a provision, Rule 204(e), designed to ensure that the 3-hour secondary NAAQS is not violated. This rule limits the total amount of SO_2 that can be emitted in an area of radius one mile by all sources owned and operated by a single person.

2.4 Special Considerations for the State of Illinois

2.4.1 Planned SIP Revisions

The Illinois Pollution Control Board held inquiry hearings on the desirability of changing SO_2 emission regulations and has recommended some changes in the existing regulations.

2.4.2 Fuels

Illinois is a heavy user and supplier of coal. About 85% of the statewide heat input for power plants is derived from coal and only about 5% from oil.

Illinois ranks fourth in total coal production and most of the coal mined is of high (> 2%) sulfur content. Most of the coal reserves are located in the southern portion of the state and Illinois lies near other large coal reserves in Indiana and western Kentucky. Thus, the major impact of regulation relaxation in Illinois would be to allow the use of high sulfur native coals.

2.4.3 Fuel Conversions

The Federal Energy Administration has identified[6] the Ridgeland power plant in Metropolitan Chicago (#67) and the Wood River power plant in Metropolitan St. Louis (#70) as plants in Illinois having the potential to convert to burning coal.

3.0 AIR QUALITY CONTROL REGION ASSESSMENTS

3.1 General Methodology

The previous section having set the background for the State Implementation Plan and evaluated the current air quality situation, this section will review the available information for each AQCR to determine the feasibility of relaxing emission regulations in the interest of conserving clean fuels. Care must be taken in interpreting the results of this analysis and the following caveats must be kept in mind: (1) The analytical procedure is intended to provide a first approximation to the evaluation of potential regulation changes (e.g., rollback and single source modeling techniques were used). The state must conduct a more detailed analysis of the situation to confirm or dispute any of these findings prior to submitting any SIP revisions. (2) In many instances the necessary data were unavailable or limited in scope. Where possible, best engineering estimates were used to fill in the gaps. Where better information is available, the state should use it in developing SIP revisions.

The analysis encompasses five distinct considerations for each AQCR. First, the current air quality situation is assessed to determine if the indicators point to the region's ability to tolerate an emission increase without violation of any NAAQS. Most of the data necessary for this review have already been presented in Section 2 and Tables B-1 and B-2 summarize the information for particulates and SO_2, respectively, in each AQCR. The assessment is made on the basis of 7 criteria: (1) current air quality violations, (2) expected NAAQS attainment dates, (3) Air Quality Maintenance Area designations, (4) total emissions, (5) portion of emissions from the state's fuel combustion sources, (6) regional emission reduction required (based on rollback calculations), and (7) pollutant priority classification. Note that this evaluation is based strictly on air quality considerations. Determinations of whether regulation relaxation would, in fact, result in clean fuels savings will be made on a source-by-source evaluation.

The second consideration for each AQCR is the power plant assessment and this data is summarized in the tables in Appendix C. All existing and proposed plants are reviewed to estimate the emission reductions to be achieved by the imposition of existing regulations. The clean fuel requirement is determined at the same time. Where dispersion modeling data are available, the maximum allowable fuel sulfur content which would enable the plant to meet the NAAQS

in its immediate vicinity is determined and the resulting emission reduction (or increase) is calculated and compared to that produced by existing regulations and to what the region requires. For the purposes of this report, the SO_2 modeling data used[1] assumes the power plant fuel use pattern in 1975 will be the same as that existing in 1971 with the addition of fuel consumption for new units coming on-line. The choice of 1971 as the baseline year is based on the consideration that fuel switching to achieve SIP emission regulations did not begin nationwide until 1972; therefore 1971 represents consumption patterns which are not dictated by emission regulations but rather by the economics of fuel availability. In terms of the maximum allowable fuel sulfur content determined from the modeling, the 1971 fuel sulfur content is used as an upper bound. For particulate emissions, plants currently below required SIP emission levels are assumed to remain so. No particulate modeling results were available. Fuel use data[2],[3] and emission data[4],[5] are drawn from both published and unpublished sources.

The third consideration for each AQCR is the assessment of large industrial/commercial/institutional point sources and the summary data is presented in Appendix D. The procedure is effectively equivalent to that carried out for power plants in that resulting emission reductions achieved through the application of existing regulations are determined along with clean fuel requirements. Emission and fuel use data were drawn from the National Emission Data System (NEDS) file.[5] No individual source modeling data were available.

The fourth consideration is area source assessments. The fuel use patterns, emission reductions, and clean fuel requirements determined by existing regulations is computed for these sources using NEDS data.[5] The results are summarized in Appendix E.

The fifth consideration is a synthesis of the first four in that the emission reductions that are imposed on all sources in the region are totaled and compared to required reductions. Fuel use requirements are also aggregated for the region. Summary tables are in Appendix F.

At this point, an overall assessment of the potential for regulation revision and resulting clean fuel savings can be made. The findings for each AQCR have been summarized on Table 2-1 and in Section 1. An AQCR is determined to be a good candidate for emission limit regulation revision if the air quality indicators show that the region has a tolerance to absorb increased emissions and if the source-by-source evaluations show that significant clean fuels

savings could be effected by such revision. If the air quality situation is such that no emission increase could be tolerated and/or if the source evaluations show little or no clean fuels savings potential, then the region is classified as a poor candidate for regulation revision. If the air quality or the clean fuels savings evaluations are inconclusive or show conflicting information, then the region is assessed as a marginal candidate for regulation revision. A much more detailed analysis must be carried out by the state to resolve the situation.

3.2 Burlington-Keokuk Interstate AQCR (#65)

This region is a poor candidate for particulate emission regulation relaxation. Even with the small number of existing monitoring sites there are indications of existing particulate air quality problems necessitating an overall reduction in particulate emissions (see Tables A-3, A-8, and 2-1). There are also proposed particulate AQMAs in the region indicating expected problems with attaining or maintaining acceptable air quality (see Tables A-1, B-1, and 2-1). Given the poor existing air quality and noting that Illinois fuel combustion sources emit a significant fraction of the particulate matter in the AQCR, there is little chance of relaxing particulate emission regulations.

The region is a marginal candidate for SO_2 emission regulation relaxation. Even though the existing air quality data in the SAROAD data bank indicates that a substantial capacity to absorb increased SO_2 emissions exists, it must be noted that data in SAROAD are available from only a limited number of sites and that no annual average data are available (see Tables A-4 and 2-1). The proposal of AQMAs in the region indicates potential SO_2 air quality maintenance problems. Since Illinois combustion sources contribute a substantial fraction of the SO_2 emitted in the region (see Tables A-5 and 2-1), any regulation relaxation would have a significant impact on air quality. Modeling results indicate a potential for some relaxation of regulations for major power plants in the area (see Tables C-1 and 2-1) and there is thus a clean fuels saving potential. However, recent local air quality data show NAAQS violations in this region and recent modeling results, unavailable for this analysis, indicate that regulation relaxation might not be possible. It would thus be desirable to clarify the situation by further study, modeling, and the use of more recent air quality data to determine whether regulations could, in fact, be relaxed for these

specific sources without creating air quality problems. (Tables have been footnoted to show where more recent data or modeling results would change entries and, since modeling results were available, Table 2-1 reflects conclusions based on the data directly available.) If source-specific regulation relaxation were feasible, some clean fuels savings could also be realized for industrial/commercial/institutional point sources for which present regulations require low sulfur fuels and an emissions reduction from current rates (see Table D-2).

3.3 East Central Illinois Intrastate AQCR (#66)

This region is a poor candidate for both SO_2 and particulate regulation relaxations. There is no particulate air quality data (see Tables A-3 and 2-1) and only one site reporting SO_2 data with no annual or 24-hour averages available (see Table A-4 and 2-1). The region is a poor candidate for SO_2 regula- relaxation, since both power plants and industrial/commercial/institutional point sources can use high sulfur (> 2%) coal even under current regulations (see Tables C-2 and D-2). Modeling results for the power plants indicate no expected air quality problems near power plants with present fuel sulfur content. Some savings in clean fuels might be realized for area sources by shifting to higher sulfur oil if such oil is available or to coal if coal burning capability exists but investigation of this possibility would require further study, since present fuel sulfur content figures were not available for area sources. Area source fuel use figures are given in Table E-1.

3.4 Metropolitan Chicago Interstate AQCR (#67)

This region is a poor candidate for both particulate and SO_2 emission regulation relaxation. There are indications of widespread poor particulate air quality (see Tables A-3 and 2-1). Rollback indicates that a significant reduction in current particulate emissions is necessary (see Tables A-8 and 2-1). Even though Illinois fuel combustion sources emit a relatively small portion of the region's total particulates (see Tables B-1 and 2-1) the large reduction required makes any relaxation of the particulate emission regulation unlikely.

The situation is similar for SO_2 with data indicating poor air quality and thus no ability to absorb increased SO_2 emissions. There are no indications of where, if anywhere, local relaxations might be possible. However, given the

significant portion of total AQCR SO_2 emissions that come from Illinois fuel combustion sources, it is unlikely that any regulation relaxation can take place.

3.5 Metropolitan Dubuque Interstate AQCR (#68)

Metropolitan Dubuque is a poor candidate for particulate regulation relaxation. Based on regional air quality data there are high particulate levels and rollback indicates that a significant reduction in emissions is needed to attain acceptable air quality. Although there are no proposed AQMAs in the Illinois portion of the region, one has been proposed in Iowa showing existing or expected air quality problems in the region. There are no significant fuel combustion point sources in the Illinois portion of Metropolitan Dubuque (see Table A-5) indicating that there would be little to be gained by regulation relaxation.

This region is also a poor candidate for relaxation of SO_2 emission regulations. There are indications of a significant capacity to absorb increased emissions but no annual average data are available. There are also no significant point sources in the Illinois portion of the region. In any case, present regulations already allow the combustion of high sulfur coal in the Illinois portion of this region. Area sources are the largest Illinois sources in this region and since fuel sulfur contents for these sources were unavailable, assessment of the potential for utilizing higher sulfur fuels requires further study.

3.6 Metropolitan Quad Cities Interstate AQCR (#69)

Based on a sufficient number of monitoring sites, there are indications of high particulate levels and hence no tolerance for increased emissions. The region is thus a poor candidate for relaxing particulate regulations.

Despite the indications from air quality that there is a significant ability to absorb increased SO_2 emissions, the region is only a marginal candidate for SO_2 emission regulation relaxation. Present regulations already allow the utilization of high sulfur coal but do require low sulfur oil. Illinois point sources do not use much oil and hence the clean fuels savings potential is minimal. Area sources account for a larger portion of the SO_2 emissions than do point sources but the potential of savings from regulation

relaxation for these sources would require further study, since percent sulfur figures for area sources were not available.

3.7 Metropolitan St. Louis Interstate AQCR (#70)

Air quality data indicate widespread high particulate levels making this region a poor candidate for particulate emission regulation relaxation. The proposal of AQMAs indicating expected difficulties with maintaining acceptable particulate air quality reinforces this assessment.

The region is also a poor candidate for SO_2 emission regulation relaxation. Air quality data indicate high SO_2 levels. (This statement relies on data more recent than that available when the original analysis was made. Tables have been footnoted to show where the more recent data would change entries and Table 2-1 reflects conclusions based on this more recent data.) There are also SO_2 air quality problems or expected maintenance problems indicated by the proposal of AQMAs. Since a significant portion of the AQCR's emissions come from Illinois fuel combustion sources, the regulations cannot be relaxed in view of the poor air quality.

3.8 North Central Illinois Intrastate AQCR (#71)

Neither particulate nor SO_2 air quality data are available for this region which is thus a poor candidate for the relaxation of emission regulations for both pollutants. If particulate data available at a later date indicates acceptable air quality a revision of this assessment for particulates may be possible.

The present regulations allow the burning of high sulfur coal but do require low sulfur oil. Since oil is a minor fuel even when area sources are included, the region would remain a poor candidate for SO_2 emission regulation relaxation even if further air quality data were to indicate a significant capacity to absorb increased SO_2 emissions.

3.9 Paducah-Cairo Interstate AQCR (#72)

Paducah-Cairo is a poor candidate for the relaxation of particulate emission regulations. There are indications that an overall reduction in particulate emissions is necessary to obtain satisfactory air quality and since fuel combustion sources contribute a significant fraction of total emissions from Illinois sources, no general relaxation seems possible.

Even though the regional air quality data and rollback calculations indicate that there is a substantial capacity to absorb increased SO_2 emissions, the modeling results indicate that there may be some short-term SO_2 problems in the vicinity of the Joppa power plant which accounts for most of the SO_2 emissions in the Illinois portion of the AQCR. Since present regulations already allow the use of high sulfur coal, this region is a poor candidate for regulation relaxation at least until the potential problem indicated by the modeling is thoroughly investigated. Also, since oil consumption even including area sources is small in this region, the potential for clean fuel savings is minimal and the region is a poor candidate for SO_2 emission regulation relaxation.

3.10 Rockford-Janesville-Beloit Interstate AQCR (#73)

Although there are no reported high particulate levels the indications are that a significant ability to absorb increased particulate emissions does not exist. There is also a lack of annual average data and any regulation relaxation would have a substantial impact upon air quality, since Illinois fuel combustion sources emit a relatively large portion of the particulates in the AQCR. Given the indicated small potential for oil or gas to coal conversions, the region is at best a marginal candidate for particulate emission regulation relaxation.

The situation for SO_2 regulation relaxation is the same except that the regional analysis indicates a significant tolerance for increased SO_2 emissions. With the overall low fuel consumption by point sources the region is a marginal candidate for regulation relaxation. Area sources do use a substantial amount of oil. Since percent sulfur in fuel use figures were not available for these sources, it was impossible to determine if they represent a significant clean fuel saving potential. More study is needed to make this determination.

3.11 Southeast Illinois Intrastate AQCR (#74)

This region is a poor candidate for particulate regulation relaxation. There is no air quality data and thus no indication of either the existence or absence of high particulate levels. Without such data regulations could not be relaxed.

There are also no indications that SO_2 emission regulations can be relaxed thus making the region a poor candidate for such relaxation. Insufficient air

quality data exists to determine whether high SO_2 levels exist. Since existing regulations already allow the use of high sulfur coal, there is little to be gained by relaxing these regulations. There are indications from the modeling results of potentially high SO_2 levels in the vicinity of the Grand Tower power plant. Some savings of low sulfur oil might be possible for industrial/commercial/institutional sources in this region but these would be minimal.

3.12 West Central Illinois Intrastate AQCR (#75)

There are indications of a significant tolerance for increased particulate emissions but no annual average data exists. Since fuel combustion sources contribute a significant portion of the particulate emissions, regulation relaxation would have a substantial impact on air quality and a more complete picture is necessary before relaxation could be recommended. The existence of a proposed TSP AQMA indicates potential problems with maintaining particulate air quality. These indications make the region a poor candidate for particulate emission regulation relaxation.

There is insufficient data to evaluate existing SO_2 air quality. Modeling results, however, indicate potential high levels in the vicinity of power plants. In any case, present regulations allow the use of high sulfur coal and there is no point in relaxing them. Point sources use little oil but some small savings of low sulfur oil might be realized for area sources. The later possibility would require further study, since sulfur in fuel figures were not available for these sources. In general, the lack of air quality data, the indications from modeling, and the present possibility of using high sulfur coal make this region a poor candidate for SO_2 emission regulation relaxation.

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2. Steam Electric Plant Factors, 1973, National Coal Association, Washington, D.C., January 1974.

3. Power plant data file, unpublished, U.S. Environmental Protection Agency, Research Triangle Park, N.C.

4. Power plant SO_2 emission estimates, unpublished data, U.S. Environmental Protection Agency, Research Triangle Park, N.C.

5. National Emissions Data Systems data bank, U.S. Environmental Protection Agency, Research Triangle Park, N.C.

6. Federal Energy Administration unpublished data.

APPENDIX A. STATE IMPLEMENTATION PLAN BACKGROUND

Table A-1. Illinois Air Pollution Control Areas

Air Quality Control Region	Federal Number	Demographic Information: 1970 Population (Millions)	Demographic Information: Area (thousand sq. mile)	Demographic Information: Population Density (people per sq. mile)	Priority Classification[b]: Particulates	Priority Classification[b]: SO_2	Priority Classification[b]: NO_2	Proposed AQMA Designations[a]: TSP Counties	Proposed AQMA Designations[a]: SO_2 Counties
Burlington-Keokuk (Iowa)	65	0.6	7.0	90	1	1	3	(3) Peoria, Woodford, Tazewell	(3) Peoria, Woodford, Tazewell
East Central Illinois	66	0.6	10.4	64	3	2	3	(0)	(0)
Metropolitan Chicago (Ind.)	67	7.8	6.1	1,278	1	1	1	(6) Cook, DuPage, Lake, McHenry, Will, Kane	(6) Cook, DuPage, Lake, McHenry, Will, Kane
Metropolitan Dubuque (Iowa, Wis.)	68	0.2	3.8	54	1	3	3	(0)	(0)
Metropolitan Quad Cities (Iowa)	69	0.6	4.9	115	1	3	3	(0)	(0)
Metropolitan St. Louis (Mo.)	70	2.5	6.5	383	1	1	3	(3) Madison, Monroe, St. Clair	(3) Madison, Monroe, St. Clair
North Central Illinois	71	0.2	3.6	60	2	IA	3	(0)	(0)
Paducah-Cairo (Ken.)	72	0.4	8.0	51	1	2	3	(0)	(0)
Rockford-Janesville-Beloit (Wis.)	73	0.6	3.5	163	2	3	3	(0)	(0)
Southeast Illinois	74	0.5	9.3	49	3	2	3	(0)	(0)
West Central Illinois	75	0.6	9.0	68	1	IA	3	(1) Macon	(0)

[a] As of November 14, 1974.

[b] 40 CFR 52, Subpart O, § 52.721

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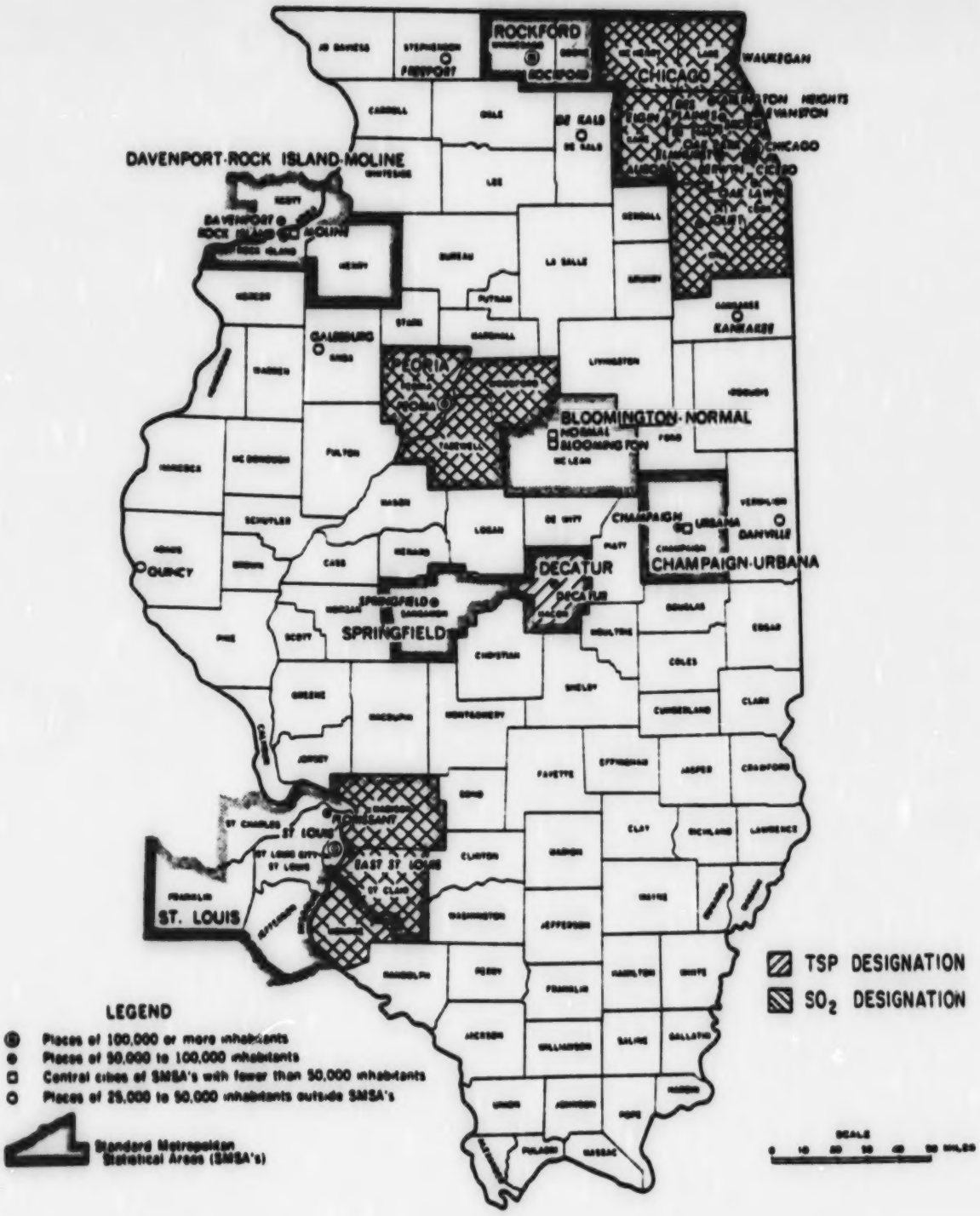

Figure A-1. Illinois Air Quality Maintenance Area (AQMA) Designations

Table A-2. Illinois Ambient Air Quality Standards

		All concentrations in $\mu gm/m^3$						
		Total Suspended Particulate		Sulfur Dioxide				Nitrogen Dioxide
		Annual	24-Hr	Annual	24-Hr	3-Hr	1-Hr	Annual
Federal	Primary	75(G)	260[a]	80(A)	365[a]	---	---	100(A)
	Secondary	60(G)	150[a]	---	---	1300[a]	---	100(A)
State[c] (Goals)	Chicago and St. Louis (Ill.) MMAs	---	---	40(G)	265[b] 450[a]	---	1120[a]	---

[a]Not to be exceeded more than once per year.
[b]Not to be exceeded more than 1% of the days in a year.
[c]These are air quality goals, not enforcable standards.

(A) Arithmetic mean

(G) Geometric mean

TABLE A-3. Illinois AQCR Air Quality Status, TSP[a]

AQCR No.	No. Stations Reporting		TSP Concentration (μgm/m³)			Number of Stations Exceeding Ambient Air Quality Standards				% Reduction Required to Meet Standards	Controlling Standard
			Highest Reading		2nd Highest Reading	Primary		Secondary			
	24-Hr	Annual	Annual	24-Hr	24-Hr	Annual	24-Hr[c]	Annual	24-Hr[c]		
65[b]	3	1	40	648	405	0	1	0	3	+ 69	24 Hr
66	0	0	---	---	---	---	---	---	---	---	---
67[b]	93	59	164	888	611	34	15	50	55	+ 80	24 Hr
68[b]	6	1	31	215	206	0	0	0	2	+ 33	24 Hr
69[b]	6	2	100	292	246	1	0	1	4	+ 67	Annual
70[b]	29	18	116	484	326	6	1	12	8	+ 74	Annual
71	0	0	---	---	---	---	---	---	---	---	---
72[b]	19	12	75	303	220	0	0	4	7	+ 50	Annual
73[b]	4	0	---	190	141	---	0	---	0	- 9	24 Hr
74	0	0	---	---	---	---	---	---	---	---	---
75	1	0	---	126	98	---	0	---	0	- 87	24 Hr

[a]1973 air quality data in National Air Data Bank as of June 7, 1974.

[b]Interstate.

[c]Violations based on 2nd highest reading at any station.

[d]Formula:

$$\left[\left(\frac{\text{2nd Highest 24-Hr - 24-Hr Secondary Standard}}{\text{2nd Highest 24-Hr - Background}}\right) \times 100,\ \left(\frac{\text{Annual - Annual Secondary Standard}}{\text{Annual - Background}}\right) \times 100\right]$$

Illinois particulate background concentration:

AQCR 65, 66, 67, 68, and 75: 38 μgm/m³

AQCR 69, 70, 71, 72, 73, and 74: 40 μgm/m³

Table A-4. ILLINOIS AQCR AIR QUALITY STATUS, SO_2[a]

AQCR No.	No. Stations Reporting			SO_2 Concentration ($\mu g/m^3$)			Number of Stations Exceeding Ambient Air Quality Standards			% Reduction Required to Meet Standards[d]	Controlling Standard
				Highest Reading		2nd Highest Reading	Primary		Secondary		
	Annual	24-Hr	Cont.	Annual	24-Hr	24-Hr	Annual	24-Hr[c]	3-Hr[c]		
65[b]	0	2	2	--	162	66	--	0[e]	--[e]	-453	24-Hr
66	0	0	1	--	--	--	--	--	--	--	--
67[b]	52	76	24	147	583	275	3	1	0	+46	Annual
68[b]	0	3	0	--	40	27	--	0	--	-1,252	24-Hr
69[b]	0	1	0	--	31	2	--	0	--	-18,150	24-Hr
70[b]	5	5	12	49	487	87	0[e]	0[e]	0[e]	-63[e]	Annual[e]
71	0	0	0	--	--	--	--	--	--	--	--
72[b]	12	19	2	19	274	74	0	0	0	-321	Annual
73[b]	1	2	1	14	140	79	0	0	--	-362	24-Hr
74	0	0	1	--	--	--	--	--	--	--	--
75	0	0	3	--	--	--	--	--	--	--	--

[a]1973 air quality data in National Aerometric Data Bank as of June 7, 1974.

[b]Interstate.

[c]Violations based on 2nd highest reading at any station.

[d]Formula:

$$\text{Maximum of } \left[\left(\frac{\text{2nd Highest 24-Hr} - \text{24-Hr Standard}}{\text{2nd Highest 24-Hr}}\right) \times 100, \quad \left(\frac{\text{Annual} - \text{Annual Standard}}{\text{Annual}}\right) \times 100\right]$$

[e]More recent local air quality indicates that there are SO_2 NAAQS violations in this region.

Table A-5. Illinois Fuel Combustion Source Summary

AQCR No.	Power Plants[a]	Other Fuel Combustion Point Sources[b]	Area Sources[c]	Total Emissions[d] (10^3 tons/year)		% Emissions from Illinois Fuel Combustion Sources	
				Particulates	SO_2	Particulates	SO_2
65[e]	5	4	10	204	258	68	97
66	2	3	15	101	75	22	97
67[e]	8	14	9	633	1,152	24	42
68[e]	0	0	1	22	58	1	1
69[e]	1	5	5	52	122	17	25
70[e]	6	4	7	355	1,234	18	54
71	3	3	6	42	27	16	68
72[e]	1	1	6	175	985	30	18
73[e]	2	0	5	33	69	43	52
74	5	4	21	47	52	46	90
75	5	3	17	79	345	52	99
Total	38	41	102	1,774	4,378	30	49

[a]Illinois fossil-fuel-fired plants.

[b]Illinois plants contributing 90% of the SO_2 emissions or more than 1,000 tons/yr of SO_2.

[c]Illinois counties.

[d]AQCR totals.

[e]Interstate.

TABLE A-6. ILLINOIS EMISSIONS SUMMARY[a], TSP

AQCR		Total (10^3 tons/yr)	%	Electricity Generation (10^3 tons/yr)	%	Industrial/Commercial/ Institutional Point Source (10^3 tons/yr)	%	Area Source (10^3 tons/yr)	%
65	Illinois	166.5	9	117.1	70	13.6	8	7.8	5
	Other	38.0	2	0.0	0	1.0	3	.3	1
	Total	204.5	12	117.1	57	14.5	7	8.1	4
66		101.0	6	5.8	6	9.6	9	7.0	7
67	Illinois	407.8	23	6.4	2	29.8	7	120.2	29
	Other	255.2	14	7.5	3	94.6	37	14.6	6
	Total	663.0	37	13.9	2	124.5	19	134.9	20
68	Illinois	1.1	<1	0.0	0	0.0	0	0.2	19
	Other	20.7	1	11.4	55	1.2	6	1.1	5
	Total	21.9	1	11.4	52	1.2	5	1.3	6
69	Illinois	18.6	1	2.3	12	1.6	8	5.1	28
	Other	33.0	2	9.0	27	1.9	6	0.6	2
	Total	51.6	3	11.3	22	3.4	7	5.7	11
70	Illinois	310.2	17	43.2	14	12.2	4	8.4	3
	Other	44.4	3	4.1	9	5.5	12	15.6	35
	Total	354.7	20	47.2	13	17.7	5	24.0	7
71		42.0	2	0.2	1	3.2	8	3.4	8
72	Illinois	65.2	4	51.3	79	0.1	<1	0.8	1
	Other	110.0	6	49.1	45	0.7	1	4.8	4
	Total	175.2	10	100.4	57	0.8	<1	5.6	3
73	Illinois	21.2	1	4.6	22	0.4	2	9.1	43
	Other	11.5	1	2.0	17	0.7	6	7.4	64
	Total	32.7	2	6.6	20	1.1	3	16.5	51
74		47.0	3	10.3	22	5.8	12	5.7	12
75		79.4	4	7.4	9	26.1	33	7.4	9
TOTAL		1,773.9	100	331.6	19	207.9	12	219.5	12

[a]Emissions in National Emissions Data System data bank as of June 1974.

TABLE A-7. ILLINOIS EMISSION SUMMARY[a], SO_2

AQCR		Total (10^3 tons/yr)	%	Electricity Generation (10^3 tons/yr)	%	Industrial/Commercial/ Institutional Point Source (10^3 tons/yr)	%	Area Source (10^3 tons/yr)	%
65	Illinois	250.7	6	204.4	82	29.3	12	15.3	6
	Other	7.0	<1	0.0	0	5.6	81	0.8	12
	Total	257.7	6	204.4	79	34.9	14	16.1	6
66		75.1	2	26.7	36	28.0	37	18.4	25
67	Illinois	530.2	12	192.2	36	63.3	12	225.2	42
	Other	622.2	14	279.2	45	192.7	31	19.6	3
	Total	1,152.4	26	471.4	41	256.0	22	244.8	21
68	Illinois	0.8	<1	0.0	0	0.0	0	0.8	93
	Other	57.2	1	51.0	89	2.9	5	2.2	4
	Total	58.0	1	51.0	88	2.9	5	3.0	5
69	Illinois	32.3	1	8.2	25	13.2	41	9.4	29
	Other	89.4	2	70.2	78	16.9	19	1.4	2
	Total	121.8	3	78.4	64	30.0	25	10.8	9
70	Illinois	719.9	16	606.8	84	41.7	6	20.4	3
	Other	514.5	12	332.5	65	18.0	3	18.5	4
	Total	1,234.4	28	939.4	76	59.7	5	38.9	3
71		26.8	1	3.5	13	6.5	24	8.2	31
72	Illinois	181.5	4	174.9	96	3.6	2	2.6	1
	Other	803.8	18	785.2	98	5.7	1	9.6	1
	Total	985.3	23	960.1	97	9.4	1	12.2	1
73	Illinois	37.4	1	19.0	51	1.8	5	15.1	40
	Other	31.7	1	22.3	70	3.4	11	5.6	18
	Total	69.1	2	41.4	60	5.2	8	20.8	30
74		52.0	1	9.2	18	20.9	40	16.9	33
75		345.3	8	290.9	84	34.8	10	17.6	5
Total		4,377.9	100	3,076.3	70	488.5	11	407.7	9

[a]Emissions in National Emission Data System data bank as of June 1974.

Table A-8. Illinois Required Emission Reduction[a]

AQCR	Required Particulate Emission Reduction		Required SO_2 Emission Reduction	
	%	10^3 tons/year	%	10^3 tons/year
65[d]	+69	+141.1	-453[b]	-1,167.4
66	---	---	---	---
67[d]	+80	+530.4	+46	+530
68[d]	+33	+7.2	-1,252[b,c]	-726.2
69[d]	+67	+34.4	-18,150[b,c]	-2,210.7
70[d]	+74	+262.5	-63	-777.7
71	---	---	---	---
72[d]	+50	+87.6	-321[b]	-3,162.8
73[d]	-9[b]	-2.9	-362	-250.1
74	---	---	---	---
75	-87[b]	-81.3	---	---

[a]Based on a proportional change of emissions to air quality.

[b]Based on second highest 24-hour reading; no annual average data available.

[c]Exceptionally large negative numbers indicate current air quality is very good. In this range, the proportional calculations do not give a very good picture of allowable emission increases. They are included here only as general indicators.

[d]Interstate.

TABLE A-9. Illinois Fuel Combustion Emission Regulations

	Existing Sources[a]		New[a]	
SO_2[b]	1.8 lbs/10^6 Btu for solid fuel, 1 hour average, in Chicago, St. Louis (Ill.), and Peoria MMAs 6.0 lbs/10^6 Btu for solid fuel, 1 hour average, outside Chicago, St. Louis (Ill.), and Peoria MMAs[c] 1.0 lbs/10^6 Btu for residual fuel oil, 1 hour average 0.3 lbs/10^6 Btu for distillate fuel oil, 1 hour average		≤ 250 x 10^6 Btu/hr 1.8 lbs 10^6 Btu for solid fuel, 1 hour average 1.0 lbs/10^6 Btu for residual fuel oil, 1 hour average 0.3 lbs/10^6 Btu for distillate fuel oil, 1 hour average	> 250 x 10^6 Btu/hr 1.2 lbs/10^6 Btu for solid fuel, 1 hour average 0.8 lbs/10^6 Btu for residual fuel oil, 1 hour average 0.3 lbs/10^6 Btu for distillate fuel oil, 1 hour average
Particulate Matter	Controlled	Uncontrolled[d]	0.1 lbs/10^6 Btu for solid fuel, 1 hour average	
	Up to 0.2 lbs/10^6 Btu for solid fuel, 1 hour average, depending on design specifications, tests, or variance.	0.1 lbs/10^6 Btu for solid fuel in Chicago MMA As in Figure A-2 outside Chicago MMA		
	0.1 lbs/10^6 Btu for liquid fuel, 1 hour average		0.1 lbs/10^6 Btu for liquid fuel, 1 hour average	

[a]For units firing more than one type of fuel, the total allowable emissions are the sum of those that would be allowed if each fuel were fired separately.

[b]There is also a maximum emission rate limitation for all sources within a radius of one mile owned or operated by the same person which limitation depends on individual stack heights and relative emissions. The lesser of the emission rates imposed by this limitation or the tabulated regulation applies.

[c]The regulation includes a provision for requiring a limit of 1.8 lbs/10^6 Btu in any MMA outside of Chicago, St. Louis (Ill.) and Peoria where an SO_2 annual average > 60 μgm/m³ exists and pursuant to an order of the Board. No such orders have been issued.

[d]Includes all sources with control equipment emitting 0.2 or more lbs/10^6 Btu of actual heat input.

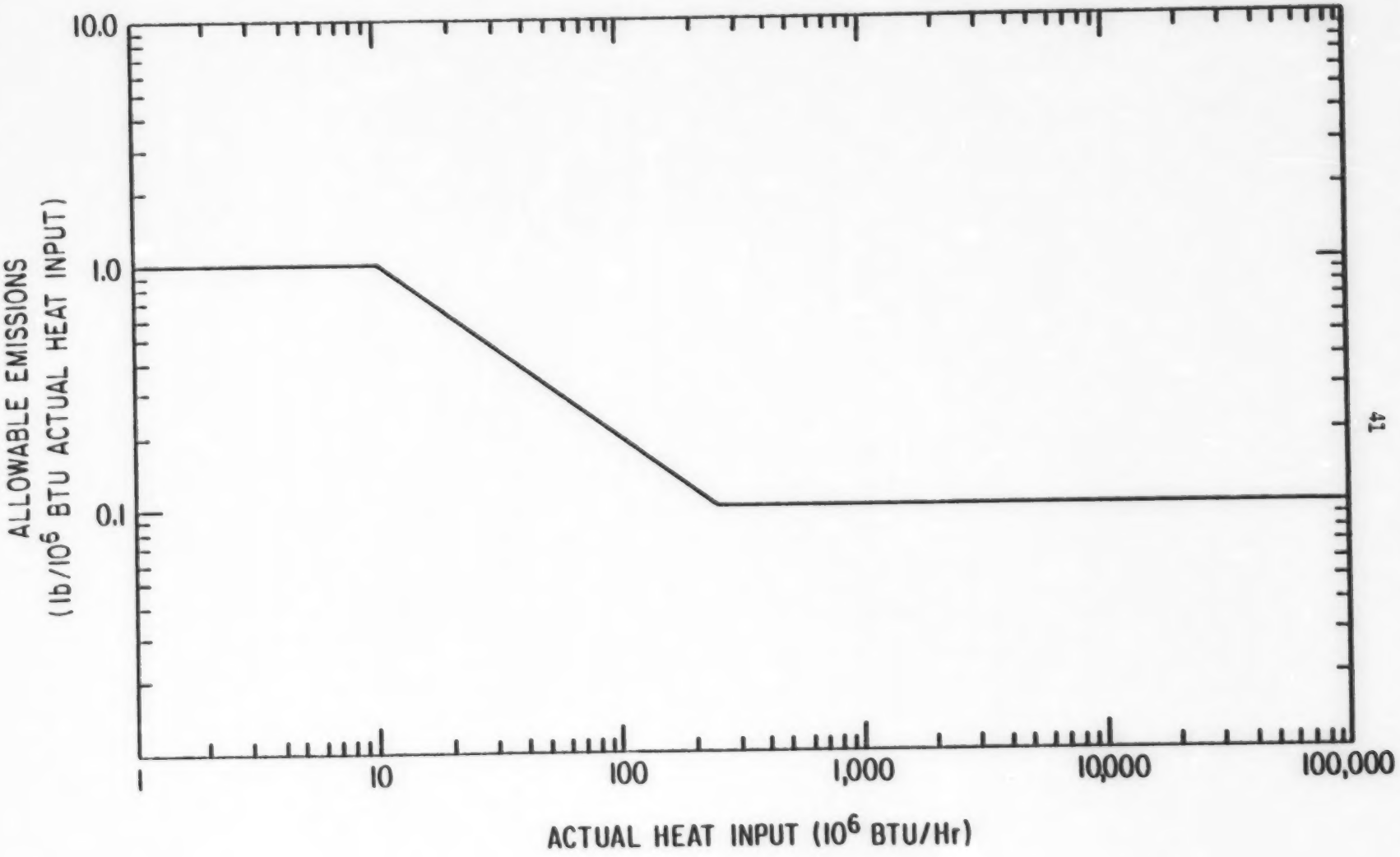

Figure A-2. Allowable Particulate Emissions from Sources outside Chicago MMA

APPENDIX B

Regional Air Quality Assessment

Table B 1. Illinois AQCR Candidacy Assessment for Particulate Regulation Relaxation

AQCR		Stations with Particulate Air Quality Violations	Expected Attainment Date	Counties with Proposed Particulate NAA Designations	Total Particulate Emissions (10^3 tons/yr)	% Emissions from Illinois Fuel Combustion	Emission Reduction Required for NAAQS (10^3 tons/yr)	Particulate Priority
Burlington-Keokuk[a]	65	3	7/75	3	205	68	+141	1
East Central Illinois	66	-	-	0	101	22	-	3
Metropolitan Chicago[a]	67	59	7/75	6	663	24	+530	1
Metropolitan Dubuque[a]	68	2	7/75	0	22	1	+7	1
Metropolitan Quad Cities[a]	69	4	7/75	0	52	17	+34	1
Metropolitan St. Louis[a]	70	19	7/75	3	355	18	+262	1
North Central Illinois	71	-	7/75	0	42	16	-	2
Paducah Cairo[a]	72	7	7/75	0	175	50	+88	1
Rockford Janesville Beloit[a]	73	0[b]	c	0	33	43	-3	2
Southeast Illinois	74	-	-	0	47	46	-	3
West Central Illinois	75	0[b]	c	1	79	52	-81	1

[a] Interstate

[b] No annual data.

[c] Presently meeting standards.

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Table B-2. Illinois AQCR Candidacy Assessment for SO_2 Regulation Relaxation

AQCR		Stations with SO_2 Air Quality Violations	Expected Attainment Date	Counties with Proposed SO_2 AQMA Designations	Total SO_2 Emissions (10^3 tons/yr)	% Emissions from Illinois Fuel Combustion	Emission Reduction Required for NAAQS (10^3 tons/yr)	SO_2 Priority
Burlington-Keokuk[a]	65	0[b,d]	c	3	258	97	-1,167	1
East Central Illinois	66	-	7/75	0	75	97	-	2
Metropolitan Chicago[a]	67	4	7/75	6	1152	42	+530	1
Metropolitan Dubuque[a]	68	0[b]	c	0	58	1	-726	3
Metropolitan Quad Cities[a]	69	0[b]	c	0	122	25	-2,211	3
Metropolitan St. Louis[a]	70	0[d]	c	3	1234	54	-777[d]	1
North Central Illinois	71	-	7/75	0	27	68	-	IA
Paducah-Cairo[a]	72	0	c	0	985	18	-3,163	2
Rockford-Janesville-Beloit[a]	73	0	c	0	69	52	-250	3
Southeast Illinois	74	-	7/75	0	52	90	-	2
West Central Illinois	75	-	7/75	0	345	99	-	IA

[a]Interstate

[b]No annual data.

[c]Presently meeting standards.

[d]More recent local air quality data indicates that there are SO_2 NAAQS violations in this region.

APPENDIX C

Power Plant Assessment

Table C-1. Illinois Power Plant Assessment

AQCR	Plant	1975 Capacity (Mw)	Estimated 1975 Fuel Use		% S Under SIP Regulations[b]	% S Allowed by Model[c]
			Fuel	Quantity[a]		
65[d]	Edwards	725.0	Coal	2,193	0.8	2.5[i]
			Oil	108	0.10	-
	Wallace	325.0	Coal	559	1.0	3.0[i]
			Oil	40	0.10	-
			Gas	4,780	-	-
	Powerton	2933.8	Coal	6,261	0.7	3.3[i]
			Oil	647	0.50	-
	Havana[e]	230.0	Coal	472	3.2	3.3[i]
			Oil	139	0.10	-
66	Vermillion	182.3	Coal	486	2.9	2.9
			Oil	13	0.10	-
	Abbott	30.0	Coal	145	2.6	2.6
			Oil	2,803	0.15	-
67[d]	Calumet[f]	107.0	Coal	120	0.98	-
			Gas	5,357	-	-
	Crawford	701.5	Coal	673	0.98	-
			Gas	20,197	-	-
	Fisk	546.6	Coal	632	0.98	-
			Gas	11,143	-	-
	Joliet	1787.4	Coal	3,230	0.98	-
			Gas	11,667	-	-
	Ridgeland	690.0	Coal	11	0.98	-
			Oil	258,636	0.76	-
	Waukegan	932.8	Coal	1,926	0.98	-
			Gas	7,866	0.95	-
	Will County	1268.9	Coal	3,079	0.98	-
	Winnetka	25.5	Coal	15	0.98	-
			Gas	725	-	-

Table C-1. Illinois Power Plant Assessment (Contd.)

AQCR	Plant	1975 Capacity (Mw)	Estimated 1975 Fuel Use		% S Under SIP Regulations[b]	% S Allowed by Model[c]
			Fuel	Quantity[a]		
68[d]	NO PLANTS					
69[d]	Moline	99.1	Coal	17	1.73	-
			Oil	336	0.40	-
			Gas	4,148	-	-
70[d]	Baldwin	1846.1	Coal	3,430	3.3	-
			Oil	155	0.10	-
	Wood River	650.1	Coal	1,407	2.82	-
			Oil	265	0.10	-
			Gas	9,470	-	-
	Cahokia	300.0	Coal	204	0.98	-
			Oil	23,419	0.95	-
	Venice #1	55.0	Oil	987	0.10	-
			Gas	19	-	-
	Venice #2	500.0	Coal	753	0.98	-
			Gas	8,513	-	-
	Highland	12.5	Coal	36	0.98	-
71	Dixon	119.0	Coal	292	2.8	2.8
			Gas	2,033	-	-
	Hennepin	306.3	Coal	367	3.1	3.1
			Gas	10,567	-	-
	Peru	15.3	Coal	41	3.3	-
72[d]	Joppa	1100.3	Coal	3,107	2.7	2.7[g]
73[d]	Sabrooke	146.4	Coal	245	1.69	-
			Gas	4,508	-	-
	Rochelle	12.7	Coal	44	3.3	-
74	Grand Tower	179.6	Coal	509	2.3	2.3[g,h]
			Oil	109	0.43	-
	Hutsonville	210.0	Coal	433	2.3	2.3
			Oil	252	0.26	-
	Marion	99.0	Coal	277	3.3	-
			Oil	42	0.95	-

Table C-1. Illinois Power Plant Assessment (Contd.)

AQCR	Plant	1975 Capacity (Mw)	Estimated 1975 Fuel Use		% S Under SIP Regulations[b]	% S Allowed by Model[c]
			Fuel	Quantity[a]		
74 (Con'd.)	Fairfield	12.5	Coal	36	3.3	-
	Mt. Carmel	20.5	Coal	45	3.3	-
75	Coffeen	1005.5	Coal	2,815	3.1	3.5[g]
			Oil	133	0.46	-
	Meredosia	554.4	Coal	692	3.5	3.5[g]
			Oil	533	0.41	-
	Kincaid	1319.4	Coal	2,999	3.1	3.1[g]
	Lakeside	146.0	Coal	248	3.3	3.3[g]
			Oil	760	0.60	
	Dallman	160.0	Coal	501	3.3	3.3[g]
			Oil	84	0.95	-

[a]Coal quantity is 10^3 tons/yr., oil quantity is 10^3 gal/yr., gas quantity is 10^6 ft^3/yr. Estimates are based on 1971 fuel use patterns plus planned additions. If 1971 fuel use data were unavailable, 1972 data were used.

[b]The maximum allowable % S is assumed to be the 1971 % S unless the regulations require a lower % S.

[c]The maximum allowable % S is assumed to be the 1971 % S unless modeling results show a lower % S is allowable.

[d]Interstate

[e]This plant is projected to show a significant switch from oil to coal by 1975.

[f]These figures are based on an expected reintroduction of coal as a fuel by 1975.

[g]Modeling calculations indicate that the 24-hour primary air quality standard may be exceeded even at SIP.

[h]Modeling calculations indicate that the annual primary air quality standard may be exceeded even at SIP.

[i]More recent modeling and local air quality data indicate that this might be an overestimate and that the present regulations might have to be met.

Table C-2. Illinois Power Plant Evaluation Summary

		SO_2							Particulates
		1975 Fuel Required by SIP Regulations[a]			1975 Emission Reduction[b] (tons/yr)	1975 Fuel Required by Modified Regulations[c]		1975 Modified Emission Reduction[b] (tons/yr)	1975 Emissions Reduction by SIP Regulations[d] (tons/yr)
AQCR	Fuel	< 1%	1-2%	> 2%		< 1%	1-2% > 2%		
65[e]	Coal Oil Gas	8,454 934 4,959	559	472	63,717	934 4,959	9,485[m]	-162,034[m]	105,301
66	Coal Oil	2,816		631	-5,311	2,816	631	-5,311	5,258[f]
67[e]	Coal Oil Gas	9,686 258,636 56,955			162,389	No modeling results available.			10,533[g]
68[e]	NO PLANTS								
69[e]	Coal Oil Gas	336 4,148	17		-659	No modeling results available.			2,235
70[e]	Coal Oil Gas	993 24,826 18,002		4,837	-12,853	No modeling results available.			36,634[h]
71	Coal Gas	12,600		700	1,261	12,600	659[i]	1,263[i]	0
72[e]	Coal			3,107	-6,286		3,107[j]	-6,286[j]	48,087
73[e]	Coal Gas	4,508	245	44	-2,058	No modeling results available.			--
74	Coal Oil	403		1,300	-2,389	403	942[j,k,l]	1,694[j,k,l]	21,769
75	Coal Oil	1,510		7,255	-36,301	1,510	7,255[j]	-36,301[j]	775[m]
Illinois Total	Coal Oil Gas	19,133 289,461 101,172	821	18,346	101,510	5,663 17,559	22,079	-206,975	230,588

Table C-2. Illinois Power Plant Evaluation Summary (Contd.)

[a]Fuel requirements based on 1971 fuel use patterns at 1975 consumption rates plus any new units. If 1971 fuel use data were unavailable, 1972 data were used. Coal in 10^3 tons/yr, oil in 10^3 gal/yr, gas in 10^6 ft^3/yr. Maximum % S is 1971 % S unless regulations require a lower % S.

[b]Emission reduction from current emission rates. If actual % S was unknown, state-wide averages were used.

[c]Maximum allowable % S is 1971 % S unless modeling indicates a lower value. Modeling did not treat oil. Oil and gas figures are those required by SIP regulations.

[d]Emission reduction from current emission rates. Plants already below SIP requirements are assumed to remain so. No reduction listed if emissions are available from less than 2/3 of the 1975 capacity.

[e]Interstate

[f]Based on one of two plants having 86% of 1975 capacity.

[g]Emissions available for only 85% of 1975 capacity.

[h]Emissions available for about 83% of 1975 capacity.

[i]Modeling results for 97% of 1975 capacity.

[j]Modeling calculations indicate that the 24-hour primary air quality standard may be exceeded even at SIP.

[k]Modeling calculations indicate that the annual primary air quality standard may be exceeded even at SIP.

[l]Modeling results available for only 75% of 1975 capacity.

[m]Emissions available for 95% of 1975 capacity.

[n]More recent modeling and local air quality data indicate that the regulation modification shown here might not be possible.

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APPENDIX D

Industrial, Commercial, Institutional Point Source Assessment

Table D-1. Illinois Industrial/Commercial/Institutional Source Assessment

AQCR	Plant[a]	Fuel[b]	Estimated Fuel Consumption[c]	SIP Regulations % S[d]
65[e]	CPC International	Coal	114	0.98
	Caterpillar Tractor	Coal Gas	121 761	0.98
	Walker & Son	Coal	106	0.98
	Celotex Corporation	Coal Gas	38 191	0.98
66	U.S. Industrial Chemical	Coal Gas	420 4,020	3.3
	University of Illinois	Coal	159	3.3
	Central Soya	Coal	28	3.3
67[e]	Wyman-Gordon	Coal Oil	61 3,110	0.98 0.95
	Clark Oil	Oil	6,230	0.95
	Morris Paper Mills	Coal	55	3.3
	CPC International	Coal Gas	360 1,080	0.98
	Blockson Works	Coal	88	0.98
	Amoco Chemical	Oil Gas	33,700 2,220	0.95
	American Potash & Chemical	Coal	29	0.98
	Uniroyal	Coal Oil	85 1,457	0.98 0.95
	Union Oil	Oil	6,030	0.95
	Argonne National Laboratory	Coal	48	0.98
	Caterpillar Tractor	Coal Oil	49 2,500	0.98 0.95
	Container Corp. of America	Coal	46	0.98
	GM-Electromotive Division	Coal	138	0.98
	Manteno State Hospital	Coal	61	0.98

Table D-1. Illinois Industrial/Commercial/Institutional Source Assessment (Contd.)

AQCR	Plant[a]	Fuel[b]	Estimated Fuel Consumption[c]	SIP Regulations % S[d]
68[e]	No sources			
69[e]	International Harvester	Coal	32	3.3
	John Deere-Moline	Coal	28	3.3
		Gas	396	
	Rock Island Arsenal	Coal	50	3.3
	John Deere-E. Moline	Coal	12	3.3
		Oil[f]	50	0.28
		Gas	1,608	
	John Deere-Plow Works	Coal	24	3.3
		Gas	940	
70[e]	Alton Box Board	Coal	192	0.98
		Oil	2,229	0.95
		Gas	845	
	Laclede Steel	Coal	< 1	0.98
		Oil	37,300	0.95
		Gas	168	
	Monsanto	Coal	132	0.98
		Oil[f]	1,400	0.28
	Shell Oil	Oil	70,488	0.95
		Gas	3,288	
71	Ottowa Silica	Coal	56	3.3
	Dixon Street School	Coal	37	3.3
	National Biscuit	Coal	13	3.3
		Oil	1,990	0.95
		Gas	480	
72[e]	Missouri Portland Cement	Coal	87	3.3
73[e]	No sources			
74	Southern Illinois Power	Coal	100	3.3
	Maran Oil	Oil	72,440	0.95
		Gas	10,001	
	Old Ben Coal	Coal	24	3.3
	Texaco	Oil	12,572	0.95

Table D-1. Illinois Industrial/Commercial/Institutional Source Assessment (Contd.)

AQCR	Plant[a]	Fuel[b]	Estimated Fuel Consumption[c]	SIP Regulations % S[d]
75	Staley Manufacturing	Coal Gas	404 221	3.3
	Packaging Corporation	Coal	73	3.3
	Caterpillar Tractor	Coal Gas	66 121	3.3

[a]Illinois plants contributing 90% of the AQCR's SO_2 or emitting more than 1,000 tons/yr of SO_2.

[b]Does not include plant or process gas. Oil is residual unless otherwise specified.

[c]Coal in 10^3 tons/yr, oil in 10^3 gal/yr, gas in 10^6 ft^3/yr.

[d]Assuming state-wide average heating values for fuels.

[e]Interstate.

[f]Distillate oil.

Table D-2. Illinois Industrial/Commercial/Institutional Source Evaluation Summary

AQCR	Fuel[a]	Fuel Required by Existing Regulations[b] 1¢	1-2¢	2¢	SO_2 Emission Reduction[c] (tons/yr)
65[e]	coal	379			11,923
	gas	952			-
66	coal			607	-11,507
	gas	4,020			-
67[e]	coal	965		55	10,971
	oil	53,027			3,765
	gas	3,300			-
68[e]	No sources				-
69[e]	coal			146	- 1,953
	oil[d]	50			1
	gas	2,944			-
70[e]	coal	324			14,401
	oil	110,017			8,718
	oil[d]	1,400			- 46
	gas	4,301			-
71	coal			106	- 1,547
	oil	1,990			102
	gas	480			-
72[e]	coal			87	- 2,152
73[e]	No sources				
74	coal			124	- 570
	oil	85,012			1,002
	gas	10,001			
75	coal			543	- 4,143
	gas	342			-
Illinois Total	coal	1,668		1,668	
	oil	250,046			
	oil[d]	1,450			
	gas	26,340			
					28,965

[a]Oil is residual unless otherwise specified.

[b]Does not include plant or process gas. Coal in 10^3 tons/yr; oil in 10^3 gal/yr; gas in 10^6 ft ^{3}/yr.

[c]Emission reduction from current rates.

[d]Distillate oil.

[e]Interstate.

APPENDIX E

Area Source Assessment

Table E-1. Illinois Area Source Fuel Use

AQCR	Coal (10^3 tons/yr)	Distillate Oil (10^3 gals/yr)	Residual Oil (10^3 gals/yr)	Natural Gas (10^6 ft^3/yr)
65[a]	113	47,850	24,880	61,240
66	117	87,180	37,900	39,370
67[a]	1,412	1,274,170	468,050	650,710
68[a]	23	40,860	1,630	8,890
69[a]	68	45,350	20,640	43,240
70[a]	361	162,280	45,830	153,010
71	54	42,810	13,400	14,410
72[a]	159	32,810	7,070	19,600
73[a]	186	114,180	19,560	44,730
74	127	30,840	26,590	68,890
75	115	60,710	39,830	41,360
Total	2,735	1,939,040	705,380	1,145,450

[a]Interstate - Fuel use figure is for entire AQCR.

APPENDIX F. FUELS ASSESSMENT

Table F-1. Illinois Clean Fuels Analysis Summary

AQCR	Fuel	Existing Regulations Clean Fuel Requirements[a] < 1% S	Existing Regulations Clean Fuel Requirements[a] 1-2% S	Modified Regulations Clean Fuel Requirements[b] < 1% S	Modified Regulations Clean Fuel Requirements[b] 1-2% S
65[c,k]	Coal	8,833	539		
	Oil	934		934	
66	Coal				d
	Oil	2,816			
67[e]	Coal	10,651			e
	Oil	311,663			
68[c]	No sources				
69[c]	Coal		17		f
	Oil	386			
70[c]	Coal	1,317			e
	Oil	136,243			
71	Coal				d
	Oil	1,990			
72[c]	Coal				g
73[c]	Coal		245		f
74	Coal				h
	Oil	85,415			
75	Coal				i
	Oil	1,510			
State Total	Coal	20,801	821	934[j]	
	Oil	540,957			

[a] From power plant and industrial/commercial/institutional point sources. Includes only that required and not entire fuel consumption. Coal in 10^3 tons/yr, oil in 10^3 gal/yr.

[b] Based on modeling results. No modeling results available for industrial/commercial/institutional point sources. Includes only that required and not entire consumption.

[c] Interstate.

[d] Presently using high S coal and may continue to do so under SIP. Modeling results indicate no expected local air quality problems with present fuels.

[e] Although no modeling results are available the regional analysis indicates that no shift to higher fuel sulfur content could be tolerated.

[f] Although no modeling results are available the regional analysis indicates that some shift to higher fuel sulfur content could be tolerated.

[g] Already using high sulfur coal. Although the regional analysis indicates that some emission increase could be tolerated, modeling calculations indicate that the 24-hour primary air quality standard may be exceeded even at SIP.

[h] Already using high sulfur coal. Modeling calculations indicate that the 24-hour and annual primary air quality standards may be exceeded even at SIP.

[i] Already using high sulfur coal. Modeling calculations indicate that the 24-hour primary air quality standard may be exceeded even at SIP.

[j] Incomplete picture of clean fuels savings due to lack of modeling data in all AQCR's.

[k] More recent modeling and local air quality data indicate that it might not be possible to realize the clean fuel savings shown here.

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